

CLAIMS

We claim:

- 5 1. A fabric body comprising
 at least two joined textile panels

 a length of cable having cable side surfaces, the cable extended
 across at least a portion of at least two textile panels, and
10 a tape comprising an adhesive that covers and adheres to the
 length of cable, wherein the adhesive extends beyond cable side
 surfaces onto the textile panels and adheres to the textile panels,
 and
15 wherein the cable is secured between the tape and the textile
 panels.
- 20 2. The fabric body of claim 1 wherein the cable remains secured for at
 least two wash cycles.
3. The fabric body of claim 1 wherein the cable remains secured for at
 least five wash cycles.
- 25 4. The fabric body of claim 1 wherein the direct current (DC)
 resistance of a conductor in the cable is less than 100 ohms per
 meter after two wash cycles.
- 30 5. The fabric body of claim 1 wherein the direct current (DC)
 resistance of a conductor in the cable is less than or equal to 100
 ohms per meter after five wash cycles.
6. The fabric body of claim 1 wherein the cable has one or more
 transmission elements.
- 35 7. The fabric body of claim 1 wherein the cable is a coaxial cable,
 ribbon cable or twisted pair.
8. The fabric body of claim 1 wherein the fabric body further comprises
40 an adhesive between the cable and the textile panels.
9. The fabric body of claim 1 wherein the adhesive between the cable
 and the textile panels is a pressure sensitive adhesive.

10. The fabric body of claim 1 wherein the tape adhesive is chemically activated.
- 5 11. The fabric body of claim 1 wherein the tape adhesive is thermally activated.
12. The fabric body of claim 1 wherein the tape adhesive is a thermoset or thermoplastic adhesive.
- 10 13. The fabric body of claim 11 wherein the cable comprises one or more insulation layers which is thermally stable at the processing temperature of the tape adhesive.
- 15 14. The fabric body of claim 1 wherein the tape adhesive comprises polyurethane.
15. The fabric body of claim 1 wherein the tape adhesive comprises silicone.
- 20 16. The fabric body of claim 1 wherein the tape comprises three layers.
17. The fabric body of claim 16 wherein the tape comprises a knit layer.
- 25 18. The fabric body of claim 1 wherein the tape comprises two layers.
19. The fabric body of claim 18 wherein the tape comprises a layer of polytetrafluoroethylene (PTFE).
- 30 20. The fabric body of claim 1 wherein the textile panels are liquidproof.
21. The fabric body of claim 1 wherein the fabric body is liquidproof.
- 35 22. The fabric body of claim 1 wherein the fabric body is a personal shelter.
23. The fabric body of claim 1 wherein the fabric body is a tent.
- 40 24. The fabric body of claim 1 wherein the fabric body is a garment.
25. The fabric body of claim 1 wherein the fabric body is a jacket.
26. The fabric body of claim 1 wherein the fabric body is a glove.
- 45 27. The fabric body of claim 1 further comprising connectors having at least one surface connected to cable ends.

28. The fabric body of claim 27 wherein at least one surface of the connectors is covered with tape adhesive and secured between the tape and fabric body.
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29. The fabric body of claim 1 wherein the cable is capable of transmitting power or data.
30. The fabric body of claim 1 wherein the cable is capable of transmitting electrical or optical data.
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31. The fabric body of claim 1 wherein the cable is capable of transmitting electromagnetic signals.
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32. The fabric body of claim 1 wherein the cable has a thickness of less than or equal to 0.5 millimeters.
33. A fabric body comprising
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- a textile having a surface,
- a length of micro-ribbon cable comprising an insulation layer, the cable having cable side surfaces, the cable extended across at least a portion of the textile, and
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- a tape comprising a thermally stable layer and a polyurethane adhesive, wherein the tape covers the length of micro-ribbon cable, and the polyurethane adhesive adheres to the cable and extends beyond cable side surfaces and adheres to the textile surface,
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- wherein the cable is secured between the textile surface and the tape, and wherein the insulation layer and the thermally stable layer are thermally stable above the processing temperature of the tape adhesive.
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34. The fabric body of claim 33 wherein the insulation layer is polytetrafluoroethylene (PTFE)

35. The fabric body of claim 33 wherein the insulation layer is expanded polytetrafluoroethylene (ePTFE).
- 5 36. The fabric body of claim 33 wherein the micro-ribbon cable has a thickness of less than or equal to 0.5 millimeter.
37. The fabric body of claim 33 further comprising an additional adhesive between the cable and the textile surface.
- 10 38. The fabric body of claim 33 wherein the tape further comprises a knit layer.
39. A method of assembling a fabric body having a cable comprising
15 joining at least two textile panels to form a fabric body comprising a seam;

extending a length of cable having cable side surfaces, across the
20 seam onto a portion of at least two textile panels;

providing a tape comprising an adhesive, the tape adhesive adhering to and covering the cable length and extending beyond the cable side surfaces; and
25 the tape adhesive adhering the tape to the fabric body, thereby securing the cable to the fabric body.
40. The method of claim 39 wherein the cable remains secured to the
30 fabric body for at least two wash cycles.
41. The method of claim 39 further comprising securing the cable between the tape and the fabric body.
- 35 42. The method of claim 39 wherein the steps of extending a length of cable and providing a tape are concurrent.
43. The method of claim 39 further comprising the step of applying an additional adhesive across at least two textile panels prior to the
40 step of extending a length of cable.

44. The method of claim 43 wherein the step of extending a length of cable comprises extending the length of cable on the adhesive, and adhering the cable to the adhesive.
- 5 45. The method of claim 39 wherein the cable comprises an adhesive on a cable surface, further comprising the step of adhering the length of cable to the textile panels prior to the step of providing a protective tape.
- 10 46. The method of claim 39 further comprising the steps of providing connectors and terminating the cable with connectors.
47. The method of claim 46 further comprising covering the connectors with the tape comprising adhesive, the adhesive
15 extending beyond connector edges and onto the textile panels, and securing the connectors to the fabric body.
48. The method of claim 39 wherein the fabric body is a personal
20 shelter.
49. The method of claim 39 wherein the fabric body is a garment.
50. The method of claim 39 wherein the fabric body is a jacket.
- 25 51. A method of applying a cable to a fabric body comprising
providing a fabric body having at least one textile panel;
providing a seam tape sealing machine comprising a tape reel,
30 the tape reel having a tape comprising an adhesive, a heating component, and two rolls;
extending a length of cable having cable side surfaces, across at
least a portion of at least one textile panel;
35 feeding the tape from the tape reel onto the length of cable and covering the length of cable with the tape;
melting the tape adhesive with the heating component;
40 feeding the textile having the tape and cable through the two rollers; and

adhering the tape adhesive along the length of the cable, the tape adhesive extending beyond the cable side surfaces onto the textile panel thereby

5 securing the cable between the tape and the textile panel.

52. The method of claim 51 wherein the seam sealing machine further comprises a cable reel and wherein the cable is fed from the reel concurrently with the step of feeding the tape.

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53. The method of claim 51 further comprising the step of adhering the cable to the textile with an additional adhesive prior to the step of covering the cable with the tape.

15 54. The method of claim 51 wherein the fabric body is a garment.

55. The method of claim 51 wherein the fabric body is a jacket.

20 56. A method of applying a cable to a textile surface comprising providing a textile having a surface;

extending a length of cable across at least a portion of a textile surface;

25 providing a tape comprising a tape adhesive; and

securing the length of cable to the textile surface with the tape,

wherein the tape is applied by a garment taping process.

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57. The method of claim 56 further comprising covering the length of cable with a tape.

35 58. The method of claim 56 further comprising extending the tape adhesive over cable side surfaces onto the textile surface.

59. The method of claim 56 wherein the cable is secured between the tape and the textile.

60. The method of claim 56 wherein the cable comprises a thermally stable insulating layer.
- 5 61. The method of claim 56 wherein the textile is fabric body.
62. The method of claim 61 wherein the fabric body is a garment.
63. The method of claim 62 wherein the garment is a jacket.
- 10 64. The method of claim 62 wherein the garment is a glove.
65. The method of claim 62 wherein the garment is a shirt.
- 15 66. The method of claim 62 wherein the garment is a hood.
67. The method of claim 61 wherein the fabric body is a personal shelter.
- 20 68. The method of claim 67 wherein the personal shelter is a tent.
69. The method of claim 56 wherein the textile comprises at least two joined textile panels comprising a seam.
- 25 70. The method of claim 56 wherein the textile is liquidproof.
71. The method of claim 61 wherein the fabric body is liquidproof.
72. The method of claim 61 wherein the fabric body is moisture vapor permeable.
- 30 73. The method of claim 56 wherein the steps of extending a length of cable and providing a tape are concurrent.
- 35 74. The method of claim 56 further comprising the step of adhering an additional adhesive in a pattern across the textile prior to the step of extending a length of cable and providing a tape.

75. The method of claim 56 wherein the tape adhesive is a polyurethane.
- 5 76. The method of claim 74 wherein the additional adhesive is a pressure sensitive adhesive.
- 10 77. The method of claim 74 wherein the step of extending a length of cable further comprises extending the length of cable on a length on the additional adhesive, and adhering the cable to the length of adhesive.
78. The method of claim 56 wherein the cable comprises an additional adhesive on a cable surface.
- 15 79. The method of claim 79 further comprising the step of adhering the cable to the textile surface, prior to the step of securing the cable to the textile surface with a tape.
- 20 80. The method of claim 56 further comprising the steps of providing connectors and terminating the cable with connectors.
81. The method of claim 56 wherein the connectors are secured to the textile with a tape applied by a garment taping process.

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